

RESTRICTED DISTRIBUTIONS OF BUTTERFLIES AND PLANT CHEMISTRY. — A. C. Morton's hypothesis (*Ent. Rec.*, 94 : 67-69) that the restricted distribution of the adonis blue, *Lysandra bellargus*, results from the larvae being unable to eat cyanogenic varieties of horseshoe vetch, *Hippocrepis comosa*, is both plausible and testable. In my book *What is ecology?* (Oxford University Press, 1980), I suggest essentially the same hypothesis to account for the restricted British distribution of the black hair-streak, *Strymonidia pruni*. This species occurs in certain woods between Oxford and Peterborough whereas the larval food-plant, *Prunus spinosa* (blackthorn), is found virtually everywhere in Britain. Maps comparing the distribution of the butterfly and its food-plant are given on page 10 of *What is ecology?* On page 180 I write, "Is it possible that the tissues of blackthorn leaves differ in chemical composition in different parts of its distribution and that the black hairstreak is adapted to one particular chemical variety? This is certainly a feasible explanation for the strange distribution of the butterfly. The restriction of the black hairstreak to only part of the range of the blackthorn may represent just one step in the continuous evolutionary jostling between eater and eaten. If this interpretation is correct, the outcome might be either a spread in unpalatability of the blackthorn so that black hairstreaks become extinct, or an extension of the butterfly's distribution as it adapts to eating other chemical strains of blackthorn."

Many different chemical compounds are found in plants which play no direct part in growth and development. Their function seems to be to regulate consumption by herbivores. The cardenolides present in milkweeds and the glucosinolates in brassicas are just two examples of groups of compounds which both attract and repel potential herbivores. There is evidence of much within-species variation in the presence or absence of chemical compounds which could easily account for many of the peculiarly restricted distributions of those species of butterflies whose larvae are specialists on one food-plant. My guess is that Morton's hypothesis will be found to be essentially correct, although it may explain only the restricted distribution of *L. bellargus* and not its recent decline, unless of course there has been a dramatic increase in the frequency of the (postulated) cyanogenic varieties of *H. comosa*. — DENIS F. OWEN, 66 Scraftoft Lane, Leicester LE5 1HU.

SOME UNUSUAL INDIGENOUS MACROLEPIDOPTERA AT NINFIELD EAST SUSSEX IN JULY 1982. — The numbers of species recorded each night during this part of the year seem to be up on the respective part of last year; with this increase there have occurred some more unusual species. *Chilodes maritima* Tausch. (Silky Wainscot) appeared, as a singleton, on the 5th: I have recorded this species only once before in this site, in 1980, the example being ab. *wismariensis* Schmidt; it is probable that both these examples were blown up from the nearby Pevensey Levels, where the species occurs more frequently. On the 8th, one *Bomolocha crassalis* Fab. (Beautiful Snout) was taken at light; this was rather a surprise as to my knowledge there is no Bilberry (*Vaccinium*